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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/783,598	02/15/2001	Kiyokazu Moriizumi	010153	4350
23850	7590	11/17/2003	EXAMINER	
ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP 1725 K STREET, NW SUITE 1000 WASHINGTON, DC 20006			DINH, TUAN T	
			ART UNIT	PAPER NUMBER
			2827	

DATE MAILED: 11/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/783,598	MORIIZUMI, KIYOKAZU	
	Examiner	Art Unit	
	Tuan T Dinh	2827	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 7-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The office action mailed on 03/12/03 is hereby withdrawn.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 6, the phrase of "the insulation material of the insulative substrate includes a material that absorbs difference in a coefficient of thermal expansion (CTE) between the insulation material and a mounted semiconductor component" is not understood. How does the insulation material of the insulative substrate including the material absorbing difference CTE **between the insulation material (is that the same type material that applicant mention as above?) and a mounted semiconductor component?** It was understood by the examiner that "the insulation material of the insulative substrate having CTE different from the CTE of a mounted semiconductor component."

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. (U. S. Patent 5,473,120).

The figures and reference numbers referred to in this office action are used merely to indicate an example of a specific teaching and are not to be taken as limiting.

As to claim 1, Ito et al. disclose a front-and-back electrically conductive substrate (5, column 8, line 2) in figure 6 having an insulation material (column 5, lines 12-22) comprising:

a plurality of posts (conductive material 4, column 8, line 5) composed of a material (column 5, lines 31-44) and each having an electrically conductive portion (wiring patterns 2, 2', column 8, line 4) that has at least first and second surfaces (100, 200, see attached paper) that communicate with each other; and an insulative substrate (base 1, column 8, line 2, column 5, lines 12-22) that supports the plurality of posts (4).

Although Ito et al do not teach that *the posts can be anisotropically etched*, this limitation is taken to be a product by process limitation, and it is the patentability of the claimed product and not of recited process steps which must be established. Therefore, when the prior art discloses a product which reasonably appears to be identical with or only slightly different than the product claimed in a product-by process claim, a rejection based on sections 102 or

103 is fair. A product by process claim directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See *In re Fessman*, 180 USPQ 324,326(CCPA 1974); *In re Marosi et al.*, 218 USPQ 289,292 (Fed. Cir. 1983); and particularly *In re Thorpe*, 227 USPQ 964,966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of **the final structure of the product** "gleaned" from the process steps, which must be determined in a "product by process " claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old or obvious product produced by a new method is not a patentable product, whether claim in "product by process" claim or not.

As to claim 2, Ito et al. disclose the electrically conductive portion (2, 2') comprises an electrically conductive film (see figure 6) covering a peripheral surface of the posts (4).

As to claim 3, Ito et al. disclose in figure 6 the insulative substrate (1) is composed of an organic resin (column 5, lines 12-22); and the electrically conductive portion (2, 2') is a metal (column 5, lines 23-29) having a melting temperature higher than a baking temperature **or** a melting temperature of an insulation used in the insulative substrate (1).

As to claim 4, Ito et al. disclose the substrate in figure 6 further comprising a pad (12, column 8, line 45) for mounting a semiconductor component (not shown) is formed on at least the first surface of the front and-back electrically conductive substrate.

As to claim 5, Ito et al. disclose the substrate as shown in figure 6 further comprising a thin film (7-figure 6(4), and 14-figure 6(3)) composed of a wiring pattern

layer and an insulation layer (6, column 8, lines 6-7) is formed on at least the first surface of the front-and-back electrically conductive substrate.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. (U. S. Patent 5,473,120) in view of Onishi et al. (U. S. Patent 5,459,368).

As best understood to claim 6, Ito et al. do not show the insulation material of the insulative substrate having CTE different from the CTE of a mounted semiconductor component. However, Onishi et al. show a surface acoustic wave device mounted module in figure 1 comprising a surface acoustic wave element (1) made of at least one material selected from a group consisting of lithium niobate, lithium tannalate, lithium borate, and quartz, and an insulating resin multiplayer substrate (8), see column 4, lines 36-47. There is a different material between the multiplayer substrate and the element that would have different CTE therebetween.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the different material having different CTE in the substrate of Ito et al. as taught by Onishi et al. for the purpose of providing the sufficient melting temperature that applied on a component when mounted on a substrate.

Response to Arguments

6. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mazumoto et al., Baldi et al., and Matzke et al. disclose related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T Dinh whose telephone number is 703-306-5856. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kammie Cuneo can be reached on 703-308-1233. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0658.

A handwritten signature in black ink, appearing to read 'Tuan Dinh', with a long, sweeping horizontal line extending to the right.

Tuan Dinh
October 29, 2003.